

## ROOT AND TUBER VEGETABLE GROUP

### **Beets-Garden-Roots (NB, PB)**

Acute dietary exposure- No PDP data were available for beets-garden-roots. FDA analyzed 166 samples between 1992 and 1997. No detects were found ( $\frac{1}{2}$  LOD = 0.0015 ppm). Using 53% CT, the RDF contained 47 zeros and 53 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm). The RDF was used for both not-blended and partially-blended food forms of beets-garden-roots.

Chronic dietary exposure- The value of 0.000525 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 65 zeros and 35 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm; an average 35%CT (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

### **Carrots (NB, PB)**

Acute dietary exposure- The 1994-1996 PDP data for carrots were used (total number of samples = 1887; number of samples from imports = 98; total number of detects = 68; number of detects from imports = 3 ; range of detected residues = 0.003-0.086 ppm, weighted average  $\frac{1}{2}$  LOD = 0.00324). An estimated maximum of 20%CT according to the 1999 BEAD report was incorporated into the RDF. For not-blended food form of carrots, the detected residue data were decomposited to, initially, 1000 residue values which after truncation at tolerance (0.75 ppm) totaled 998 (range of generated values = 0.001- 0.6278 ppm with n = 29). The RDF for not-blended food forms contained 998 (generated) detects, 22156 zeros, and 4541 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm. The RDF for partially-blended food forms of carrots contained 68 detects, 1510 zeros, and 309 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm.

Chronic dietary exposure- The calculated average value of 0.00065 ppm based on average of 68 detects, 1698 zeros and 121 repeated  $\frac{1}{2}$  LOD values of 0.00324 ppm was used for the chronic exposure assessment. The average % CT of 10% was used to calculate the number of  $\frac{1}{2}$  LOD values.

### **Ginseng (PB)**

Acute dietary exposure- No PDP data were available for ginseng. FDA analyzed 2 samples in 1993 and both contained detectable residues (0.029 ppm, 0.036 ppm). However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Therefore, the 1994-1996 PDP data for carrots were translated to ginseng per HED SOP 99.3 (total number of samples = 1887; number of samples from imports = 98; total number of detects = 68; number of detects from imports = 3; range of detected residues = 0.003 -0.086 ppm, weighted average  $\frac{1}{2}$  LOD = 0.00324). Because there was no information on % CT from BEAD, it was assumed that ginseng is 100% treated. Consequently, the RDF contained 68 detects and 309 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm.

Chronic dietary exposure- The calculated average residue value of 0.00591 ppm was used for the residue input in chronic dietary exposure assessment of ginseng. This value was the average of 68 detects, and

309 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm; the assumption of 100 % CT value was also used to calculate the number of  $\frac{1}{2}$  LOD values.

### **Parsnips (NB)**

Acute dietary exposure- No PDP data were available for parsnips. FDA analyzed 11 samples between 1992 and 1997; 3 detectable residues (0.01 ppm, 0.01 ppm, 0.03 ppm) were found. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Therefore, the 1994-1996 PDP data for carrots were translated to parsnips per HED SOP 99.3 (total number of samples = 1887; number of samples from imports = 98; total number of detects = 68; number of detects from imports = 3 ; range of detected residues = 0.003 -0.086 ppm, weighted average  $\frac{1}{2}$  LOD = 0.00324). Because there was no information on % CT from BEAD, it was assumed that parsnips is 100% treated. Since parsnips is considered a not-blended commodity, the decomposited data for carrots were used for parsnips (n = 29), however, the generated residue values were truncated at tolerance for parsnips, 0.5 ppm. Consequently, the RDF contained 996 (generated) detects and 4543 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm. (Note: Since as a result of truncation of generated residue values at 0.5 ppm, the number of generated residue values reduced by 2 from carrot data, 2 values of  $\frac{1}{2}$  LOD were added to the number of  $\frac{1}{2}$  LOD values so that the total number of expected treated samples; i.e. detects +  $\frac{1}{2}$  LOD, be equal to that of carrots.)

Chronic dietary exposure- The calculated average residue value of 0.00591 ppm was used for the residue input in chronic dietary exposure assessment of parsnips. This value was the average of 68 detects, and 309 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm; the assumption of 100 % CT value was also used to calculate the number of  $\frac{1}{2}$  LOD values.

### **Potato (B, NB, PB)**

Acute dietary exposure- The 1994-95 PDP data for potatoes were used (total number of samples= 1401; total number of detects=0, and a weighted average  $\frac{1}{2}$  LOD= 0.0023). The estimated 1%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF for not-blended/partially-blended contained 1387 zeros and 14 repeated  $\frac{1}{2}$  LOD values at 0.0023 ppm. For dried potatoes, which are blended, a point estimate =  $\frac{1}{2}$  LOD = 0.000023 ppm is used.

Chronic dietary exposure- The average value of 0.000023 ppm was used for the residue input in chronic dietary exposure assessment for potatoes. This value was the average of 1387 zeros and 14 repeated  $\frac{1}{2}$  LOD values. A weighted average 1%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

### **Radishes-Roots (PB)**

Acute dietary exposure- No PDP data were available for radishes. FDA analyzed 121 samples of radishes-roots between 1992 and 1998; only 1 detectable residue (0.038 ppm) was found. Using 7% CT as the maximum % CT estimate from BEAD (1999 report), the RDF was constructed; it contained 1 detect, 113 zeros, and 7 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The calculated average residue value of 0.0003636 ppm was used for the residue input in chronic dietary exposure assessment of radishes-roots. This value was the average of 1 detect (0.038 ppm), 116 zeros and 4 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm; an average 4% CT (according

to BEAD 1999 report) was used to calculate the number of  $\frac{1}{2}$  LOD values.

#### **Radish-Oriental (NB)**

Acute dietary exposure- The 1992-98 FDA data for radish (including radish oriental) were used (total number of samples= 142; total number of detects=1, and  $\frac{1}{2}$  LOD= 0.0015). Because there was no information available from BEAD regarding the percentage of treated oriental radish, 100%CT was assumed. The RDF for not-blended contained 1 detected residue (0.038 ppm) and 141 repeated  $\frac{1}{2}$  LOD (0.0015 ppm).

Chronic dietary exposure- The average value of 0.00176 ppm was used for the residue input in chronic dietary exposure assessment for oriental radish. This value was the average of 1 detected residue, 141 repeated  $\frac{1}{2}$  LOD value. A weighted average 100%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

#### **Rutabagas (NB)**

Acute dietary exposure- No PDP data were available for rutabagas. FDA analyzed 16 samples between 1992 and 1997; no detectable residues were found. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Therefore, the 1994-1996 PDP data for carrots were translated to rutabagas per HED SOP 99.3 (total number of samples = 1887; number of samples from imports = 98; total number of detects = 68; number of detects from imports = 3 ; range of detected residues = 0.003 -0.086 ppm, weighted average  $\frac{1}{2}$  LOD = 0.00324). Because there was no information on % CT from BEAD, it was assumed that rutabagas is 100% treated. Since rutabagas is considered a not-blended commodity, the decomposited data for carrots were used for rutabagas (n = 29). Since the tolerance of rutabagas is the same as that of carrots (0.75 ppm) no further truncation of the generated residue values of carrots were necessary. Consequently, the RDF contained 998 (generated) detects and 4541 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm.

Chronic dietary exposure- The calculated average residue value of 0.00591 ppm was used for the residue input in chronic dietary exposure assessment of rutabagas. This value was the average of 68 detects, and 309 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm; the assumption of 100 % CT value was used to calculate the number of  $\frac{1}{2}$  LOD values.

#### **Sugar-Beet/Sugar-Beet-Molasses (B)**

Acute dietary exposure- No PDP data were available for sugar beets. FDA (domestic surveillance) analyzed 62 samples between 1992 and 1998. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Consequently, the FDA data for garden beets were translated to sugar beets per HED SOP 99.3 (total number of samples = 166; number of detects = 0;  $\frac{1}{2}$  LOD = 0.0015 ppm). Since sugar beets is considered a blended commodity, the entire distribution of monitoring data without regard to % CT with replacing  $\frac{1}{2}$  LOD for all non-detects was used; this would be to have an RDF containing 100 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm or simply using 0.0015 ppm as a point estimate. Since sugar beet molasses is considered a blended processed commodity, a point estimate (0.00009 ppm) was used; this value (0.00009 ppm) was the product of 0.0015 ppm and 6% CT.

Chronic dietary exposure- The value of 0.00003 ppm was used for the residue input of both sugar beets and sugar beets molasses in chronic dietary exposure assessment. This value was the average of 98 zeros and 2 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm; the average %CT, 2% (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

#### **Sweet Potato (NB, PB)**

Acute dietary exposure- The 1996-98 PDP data for sweet potatoes were used (total number of samples= 1558; total number of detects=3, and a weighted average  $\frac{1}{2}$  LOD= 0.0023). The estimated 13%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF for not-blended/partially-blended contained 3 detected residues (0.003-0.007 ppm), 1355 zeros and 200 repeated  $\frac{1}{2}$  LOD values at 0.0023 ppm.

Chronic dietary exposure- The average value of 0.00021 ppm was used for the residue input in chronic dietary exposure assessment for sweet potatoes. This value was the average of 3 detected residues, 1418 zeros and 137 repeated  $\frac{1}{2}$  LOD values. A weighted average 9%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

#### **Turnips-Roots (NB)**

Acute dietary exposure- No PDP data were available for turnips-roots. FDA analyzed 38 samples between 1992 and 1997; no detectable residues were found. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Therefore, the 1994-1996 PDP data for carrots were translated to turnips-roots per HED SOP 99.3 (total number of samples = 1887; number of samples from imports = 98; total number of detects = 68; number of detects from imports = 3; range of detected residues = 0.003 -0.086 ppm, weighted average  $\frac{1}{2}$  LOD = 0.00324). Because there was no information on % CT from BEAD, it was assumed that turnips-roots is 100% treated. Since turnips-roots is considered a not-blended commodity, the decomposited data for carrots were used for turnips-roots (n = 29), however, the generated residue values were truncated at tolerance for turnip-roots, 0.5 ppm. Consequently, the RDF contained 996 (generated) detects and 4543 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm. (Note: Since as a result of truncation of generated residue values at 0.5 ppm, the number of generated residue values reduced by 2 from carrot data, 2 values of  $\frac{1}{2}$  LOD were added to the number of  $\frac{1}{2}$  LOD values so that the total number of expected treated samples; i.e. detects +  $\frac{1}{2}$  LOD, be equal to that of carrots.)

Chronic dietary exposure- The calculated average residue value of 0.00591 ppm was used for the residue input in chronic dietary exposure assessment of turnips-roots. This value was the average of 68 detects, and 309 repeated  $\frac{1}{2}$  LOD values at 0.00324 ppm; the assumption of 100 % CT value was used to calculate the number of  $\frac{1}{2}$  LOD values.

### **LEAVES OF ROOT AND TUBER VEGETABLES GROUP**

#### **Beets-Garden-Tops (PB)**

Acute dietary exposure- No PDP data were available for beets-garden-tops. FDA analyzed only 13 samples between 1992 and 1997; with no detected residues found. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate

(100 samples), those data could not be used. Data translation from turnips-tops, which belongs to the same crop group as beet-garden-tops, was considered, however not enough data were available for turnips-tops (PDP did not sample turnips, and FDA data contained only 64 samples). Consequently, data from spinach, which had the same use pattern, were translated to beets-garden-tops per HED SOP 99.3 (total number of samples = 1638; number of samples from imports = 46; total number of detects = 41 [including a detect from diazoxon]; number of detects from imports = 4; range of detected residues [adding a diazoxon residue to diazinon] = 0.003 - 0.45 ppm, weighted average  $\frac{1}{2}$  LOD = 0.003645 ppm). Because the number of import samples did not constitute a large portion of the total samples, the maximum %CT estimate for domestic samples, according to BEAD 1999 report (53% CT) was incorporated into the RDF. The RDF contained 40 detected residues [including one with residues of diazinon and diazoxon added together], 638 zeros, and 680 repeated  $\frac{1}{2}$  LOD values at 0.003645 ppm.

Chronic dietary exposure- The 1995-1997 PDP data for spinach-fresh was also used to calculate a residue estimate, 0.00287 ppm in chronic dietary exposure. This value was the average of 40 detected residues (sum = 1.791), 669 zeros, and 320 repeated  $\frac{1}{2}$  LOD values at 0.003645 ppm; an average 35%CT (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

#### **Turnip-tops (PB)**

Acute dietary exposure- No PDP data were available for turnip-tops. FDA analyzed only 64 samples between 1992 and 1997; no detected residues found. Since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Data translation from beet-garden-tops, which belongs to the same crop group as turnip-tops (crop group 2), was considered, however not enough data were available for beet-garden-tops (PDP did not sample beets-garden-tops, and FDA data contained only 13 samples). Consequently, data from spinach which had the same use pattern were translated to turnip-tops per HED SOP 99.3 (total number of samples = 1638; number of samples from imports = 46; total number of detects = 41 [including a detect from diazoxon]; number of detects from imports = 4; range of detected residues [adding a diazoxon residue to diazinon] = 0.003 - 0.45 ppm, weighted average  $\frac{1}{2}$  LOD = 0.003645 ppm). Since the information on percentage of turnips that are treated were not available, 100% CT were assumed. The RDF contained 40 detected residues [including one with residues of diazinon and diazoxon added together], and 680 repeated  $\frac{1}{2}$  LOD values at 0.003645 ppm.

Chronic dietary exposure- The 1995-1997 PDP data for spinach-fresh was used to calculate a residue estimate (0.0082 ppm) in chronic dietary exposure assessment of turnip-tops. This value was the average of 40 detected residues (sum = 1.791 ppm), no zeros, and 320 repeated  $\frac{1}{2}$  LOD values at 0.003645 ppm; the 100 %CT in absence of the % CT information from BEAD was assumed.

### **BULB VEGETABLE GROUP**

#### **Garlic (NB, PB)**

Acute dietary exposure- The 1992-98 FDA data for dry bulb onions (yellow/white) were translated to garlic. The estimated 11%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF for dry bulb onion (16% CT) was adjusted to the assumption of 11% CT by adding zeroes to the file. Therefore, the garlic RDF for not-blended/partially-blended contained 2 detected residues (0.005-

0.01 ppm), 324 zeros and 38 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The average value of 0.00016 ppm was used for the residue input in chronic dietary exposure assessment for garlic, using dry bulb onion data. This value was the average of 2 detected residues, 310 zeros and 25 repeated  $\frac{1}{2}$  LOD values. A weighted average 8%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

### **Onions (NB, PB, B)**

#### *Green Onions*

Acute dietary exposure- The 1992-98 FDA data for green onions were used (total number of samples= 100; total number of detects=0, and  $\frac{1}{2}$  LOD= 0.0015). The estimated 23%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF for not-blended/partially-blended contained 77 zeros and 23 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm. Green onions data were used for leeks.

Chronic dietary exposure- The average value of 0.00012 ppm was used for the residue input in chronic dietary exposure assessment for green onions and leeks. This value was the average of 92 zeros and 8 repeated  $\frac{1}{2}$  LOD values. A weighted average 8%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

#### *Onions-dry bulb*

Acute dietary exposure- The 1992-98 FDA data for dry bulb onions (yellow/white) were used (total number of samples= 248; total number of detects=2, and  $\frac{1}{2}$  LOD= 0.0015). The estimated maximum 16%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF for not-blended/partially-blended contained 2 detected residues (0.005-0.01 ppm), 208 zeros and 38 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm. Onions-dry bulb data were also used for shallots.

The acute anticipated residue is 0.00029 ppm for onions-dehydrated or dried, which is a blended commodity. This value is the average of 2 detects, 208 zeroes and 38 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The average value of 0.00021 ppm was used for the residue input in chronic dietary exposure assessment for onions dry-bulb, onions-dehydrated, and shallots. This value was the average of 2 detected residues, 221 zeros and 25 repeated  $\frac{1}{2}$  LOD values. A weighted average 11%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

## **LEAFY VEGETABLES (EXCEPT BRASSICA) GROUP**

### **Celery (NB, PB)**

Acute dietary exposure- For not-blended food forms of celery, the 1993-1994 PDP data were used (total number of samples = 810; number of samples from imports = 15; total number of detects = 69; number of detects from imports = 0 ; range of detected residues = 0.005 - 0.3 ppm, weighted average  $\frac{1}{2}$  LOD = 0.0028 ppm). Because the number of import samples did not constitute a large portion of the total samples, the maximum %CT value of 15% for domestic samples were used. With the assumption that there are 3 bunches of medium-sized celery in a 5 lbs composite sample, the detected residue data were decomposited to, initially, 1000 residue values which after truncation at tolerance (0.7 ppm) totaled 997

(range of generated values = 0.0004- 0.67 ppm with n = 3). The RDF contained 997 generated detects, 9948 zeros, and 759 repeated ½ LOD values at 0.0028 ppm. For partially-blended food forms of celery, the 1993-1994 PDP data were also used. The RDF contained 69 detects, 688 zeros, and 52 repeated ½ LOD values at 0.0028 ppm.

**Chronic dietary exposure-** The average value of 0.00417 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 69 detects, 729 zeros and 12 repeated ½ LOD at 0.0028 ppm; an average 10%CT (according to BEAD 1999 report) was used for the calculation of the number of ½ LOD values.

#### **Dandelion-Greens (PB)**

**Acute dietary exposure-** No PDP data were available for dandelion-green. FDA (domestic surveillance) analyzed only 1 sample in 1993; no residue was found. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Therefore, the 1995-1997 PDP data for spinach were translated to dandelion per HED SOP 99.3 (total number of samples = 1638; number of samples from imports = 46; total number of detects = 41 [including a detect from diazoxon]; number of detects from imports = 4; range of detected residues [adding a diazoxon residue to diazinon] = 0.003 - 0.45 ppm, weighted average ½ LOD = 0.003645 ppm). Because there was no information regarding the percentage of treated dandelion available from BEAD, 100% CT was assumed. The RDF contained 40 detected residues [including one with residues of diazinon and diazoxon added together], and 680 repeated ½ LOD values at 0.003645 ppm.

**Chronic dietary exposure-** The calculated average value of 0.0082 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 40 detected residues (sum = 1.791 ppm), and 320 repeated ½ LOD values at 0.003645 ppm; 100% CT was used for the calculation of the number of ½ LOD values.

#### **Endive-Curley and Escarole (PB)**

**Acute dietary exposure-** No PDP data were available for endive and escarole. FDA (domestic surveillance) analyzed 144 sample between 1992 and 1998; 4 detected residues were found (0.03 ppm, 0.16 ppm, 0.02 ppm, 0.100 ppm). Because there was no information available from BEAD regarding the percentage of treated endive and escarole, 100% CT was assumed. The RDF contained 4 detected residues, and 140 repeated ½ LOD values at 0.0015 ppm.

**Chronic dietary exposure-** The calculated average value of 0.00361 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 4 detected residues, and 140 repeated ½ LOD values at 0.0015 ppm; 100% CT was used for the calculation of the number of ½ LOD values.

#### **Lettuce-Head (NB)**

**Acute dietary exposure-** The 1994 PDP data for fresh lettuce were used (total number of samples = 691; total number of detects = 27; range of detects = 0.005 - 0.16 ppm; number of samples from imports = 2; number of detects from imports = 0; weighted average ½ LOD = 0.002478 ppm). The estimated 39%CT

value according to the 1999 BEAD report was incorporated into the RDF. Since the head lettuce is considered to be a not-blended commodity, the detected residue data were decomposited to, initially, 1000 residue values which after truncation at tolerance (0.7 ppm) totaled 998 (range of generated values = 0 - 0.3526 ppm with  $n = 3$ ). The RDF contained 998 (generated) detects, 15580 zeros, and 8963 repeated  $\frac{1}{2}$  LOD values at 0.002478 ppm.

**Chronic dietary exposure-** The calculated value of 0.001260 ppm was used for the chronic dietary exposure assessment. This value was the average of 27 detects in 1994 PDP data (sum of detects = 0.459 ppm), 498 zeros and 166 repeated  $\frac{1}{2}$  LOD values of 0.002478 ppm. The average % CT of 28% was used to calculate the number of  $\frac{1}{2}$  LOD values.

#### **Lettuce-Leafy Varieties (PB)**

**Acute dietary exposure-** The 1994 PDP data for fresh lettuce were used (total number of samples = 691; total number of detects = 27; range of detects = 0.005 - 0.16 ppm; number of samples from imports = 2; number of detects from imports = 0; weighted average  $\frac{1}{2}$  LOD = 0.002478 ppm). The estimated 68%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF contained 27 detects, 221 zeros, and 443 repeated  $\frac{1}{2}$  LOD values at 0.002478 ppm.

**Chronic dietary exposure-** The calculated value of 0.00168 ppm was used for the chronic dietary exposure assessment. This value was the average of 27 detects in 1994 PDP data (sum of detects = 0.459 ppm), 380 zeros and 284 repeated  $\frac{1}{2}$  LOD values of 0.002478 ppm. The average % CT of 45% was used to calculate the number of  $\frac{1}{2}$  LOD values.

#### **Lettuce-Unspecified (PB)**

**Acute dietary exposure-** The 1994 PDP data for fresh lettuce were used (total number of samples = 691; total number of detects = 27; range of detects = 0.005 - 0.16 ppm; number of samples from imports = 2; number of detects from imports = 0; weighted average  $\frac{1}{2}$  LOD = 0.002478 ppm). The estimated 52%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF contained 27 detects, 332 zeros, and 332 repeated  $\frac{1}{2}$  LOD values at 0.002478 ppm.

**Chronic dietary exposure-** The calculated value of 0.00136 ppm was used for the chronic dietary exposure assessment. This value was the average of 27 detects in 1994 PDP data (sum of detects = 0.459 ppm), 470 zeros and 194 repeated  $\frac{1}{2}$  LOD values of 0.002478 ppm. The average % CT of 32% was used to calculate the number of  $\frac{1}{2}$  LOD values.

#### **Parsley (PB)**

**Acute dietary exposure-** No PDP data were available for parsley. FDA (domestic surveillance) analyzed 27 samples between 1992 and 1998 (number of detected residues = 8; range of detects = 0.005 ppm - 0.620 ppm). However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Therefore, the 1995-1997 PDP data for spinach were translated to parsley per HED SOP 99.3 (total number of samples = 1638; number of samples from imports = 46; total number of detects = 41 [including a detect from diazoxon]; number of detects from imports = 4; range of detected residues [adding a diazoxon residue to diazinon] = 0.003 - 0.45 ppm, weighted average  $\frac{1}{2}$  LOD = 0.003645 ppm). Because

the number of import samples did not constitute a large portion of the total samples, the maximum %CT estimate for domestic samples, according to BEAD 1999 report (8% CT) was incorporated into the RDF. The RDF contained 40 detected residues, 8280 zeros, and 680 repeated ½ LOD values at 0.003645 ppm.

Chronic dietary exposure- The calculated average value of 0.000328 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 40 detected residues (sum = 1.791), 8664 zeros, and 320 repeated ½ LOD values at 0.003645 ppm; an average 4%CT (according to BEAD 1999 report) was used for the calculation of the number of ½ LOD values.

### **Radicchio (NB)**

Acute dietary exposure- No PDP data were available for radicchio. FDA analyzed only 2 samples in 1992 and 1995 with no detected residues found. These data could not be used since the number of samples were not adequate. The 1994 PDP data for fresh lettuce were translated to radicchio (total number of samples for all types of lettuce = 691; total number of detects = 27; range of detects = 0.005 - 0.16 ppm; number of samples from imports = 2; number of detects from imports = 0; weighted average ½ LOD = 0.002478). Since there were no information regarding the percentage of treated radicchio available, 100% CT was assumed. The same decomposited data as for head lettuce (with n=3 and truncation at 0.7 ppm) was used for radicchio. The RDF contained 998 (generated) detects, and 8963 repeated ½ LOD values at 0.002478 ppm.

Chronic dietary exposure - The calculated value of 0.00031 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 27 detected residues (sum = 0.459 ppm) and 664 repeated ½ LOD values at 0.002478 ppm; 100% CT was used for calculation of the number of ½ LOD values.

### **Spinach (PB)**

Acute dietary exposure- For spinach-fresh, the 1995-1997 PDP data were used (total number of samples = 1638; number of samples from imports = 46; total number of detects = 41 [including a detect from diazoxon]; number of detects from imports = 4; range of detected residues [adding a diazoxon residue to diazinon] = 0.003 - 0.45 ppm, weighted average ½ LOD = 0.003645 ppm). Because the number of import samples did not constitute a large portion of the total samples, the maximum %CT estimate for domestic samples, according to BEAD 1999 report (44% CT) was incorporated into the RDF. The RDF contained 40 detected residues [including one with residues of diazinon and diazoxon added together], 918 zeros, and 680 repeated ½ LOD values at 0.003645 ppm. For spinach-canned, the 1997-1998 PDP data were used (total number of samples = 863; number of samples from imports = 1; total number of detects = 0; weighted average ½ LOD = 0.003978 ppm). Since the estimated maximum %CT for processed spinach is 60%, the RDF contained 40 zeros and 60 repeated ½ LOD values at 0.003978 ppm.

Chronic dietary exposure- For spinach-fresh, the 1995-1997 PDP data were used. The calculated average value of 0.00180 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 40 detected residues (sum = 1.791 ppm), 1278 zeros, and 320 repeated ½ LOD values at 0.003645 ppm; the average %CT, 22% (according to BEAD 1999 report) was used for the calculation of the number of ½ LOD values. For spinach-canned, the 1997-1998 PDP data for spinach-canned was used (total number of samples = 863; number of samples from imports = 1; total number of detects = 0;

weighted average  $\frac{1}{2}$  LOD = 0.003978 ppm). The average value of 0.000955 ppm (average of 24 repeated  $\frac{1}{2}$  LOD values at 0.003978 ppm and 76 zeros) was used for the residue input in chronic dietary exposure assessment; the average % CT, 24% (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

#### **Swiss Chard (NB)**

Acute dietary exposure- No PDP data were available. FDA (domestic surveillance) analyzed only 23 sample in 1993; one detected residue was found (0.11 ppm). However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. Therefore, the 1993-1994 PDP data for celery were translated to Swiss chard (total number of samples = 810; number of samples from imports = 15; total number of detects = 69; number of detects from imports = 0 ; range of detected residues = 0.005 - 0.3 ppm, weighted average  $\frac{1}{2}$  LOD = 0.0028 ppm). Because there was no information regarding the percentage of treated Swiss chard available from BEAD, 100% CT was assumed. With the assumption that there were 3 units of medium-sized Swiss chard in a 5 lbs composite sample, the same decomposed data for celery truncated at the tolerance, 0.7 ppm, (range of generated values = 0.0004 - 0.67 ppm) was used. The RDF contained 997 generated detects, and 759 repeated  $\frac{1}{2}$  LOD values at 0.0028 ppm.

Chronic dietary exposure- The average value of 0.00417 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 69 detects, 729 zeros and 12 repeated  $\frac{1}{2}$  LOD at 0.0028 ppm; a 100% average CT (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

### **BRASSICA LEAFY VEGETABLE GROUP**

#### **Bok Choy (Chinese Cabbage) (PB)**

Acute dietary exposure- No PDP data were available for bok choy. FDA (domestic surveillance) analyzed 98 sample between 1992 and 1998; 2 detected residues were found (0.04 ppm, 0.1 ppm). Because there was no information available from BEAD regarding the percentage of treated bok choy, 100% CT was assumed. The RDF contained 2 detected residues, and 96 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The calculated average value of 0.0029 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 2 detected residues, and 96 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm; 100% CT was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

**Broccoli-Chinese** The data for bok choy was used for both acute and chronic exposure.

#### **Broccoli (NB, PB)**

Acute dietary exposure- For broccoli-fresh, the 1994 PDP data were used (total number of samples = 634; number of samples from imports = 15; total number of detects = 0; weighted average  $\frac{1}{2}$  LOD = 0.00280 ppm). Because the number of import samples did not constitute a large portion of the total samples, the maximum %CT estimate for domestic samples, according to BEAD 1999 report (21% CT) was incorporated into the RDF. The RDF contained 79 zeros, and 21 repeated  $\frac{1}{2}$  LOD values at 0.00280 ppm;

the RDF was used for both not-blended and partially-blended food forms of broccoli.

Chronic dietary exposure- The average value of 0.00031 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 89 zeros and 11 repeated  $\frac{1}{2}$  LOD at 0.00280 ppm; the average %CT, 11% (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

#### **Brussels Sprouts (PB)**

Acute dietary exposure- No PDP data were available for Brussels sprouts. The FDA domestic surveillance data for 1992-1998 contain 14 analyses with no detectable residues reported. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. The use pattern for Brussels sprouts, broccoli and cauliflower are identical; therefore, the 1994 PDP data for broccoli were used as surrogate data (634 samples analyzed; total number of detects = 0; weighted average  $\frac{1}{2}$  LOD = 0.00280 ppm). Based on the assumption of all nondetectable residues and 100% CT(1999 BEAD report), the acute anticipated residue is equal to  $\frac{1}{2}$  LOD = 0.0028 ppm.

Chronic dietary exposure- BEAD reports an average 90% CT for Brussels sprouts. Therefore, the chronic anticipated residue is  $(\frac{1}{2} \text{ LOD}) \times (0.90) = 0.0025$  ppm.

#### **Cabbage (NB, PB)**

Acute dietary exposure- No PDP data were available for cabbage-green and red-fresh. The FDA domestic surveillance data contained 532 total data for cabbage with only one detected residue found (0.11 ppm). There were not enough detected residues (30 or more) for decompositing; Therefore, the detected residue in FDA data (0.11 ppm) was multiplied by a factor of 3 (assuming there are 3 cabbages in 5 lb samples) to calculate the highest possible residue in single cabbage (0.33 ppm). This value (0.33 ppm) was only used in the RDF for not-blended food forms of cabbage. The RDF was constructed based on 17% CT estimate (BEAD, 1999). It contained one detected residue (0.33 ppm), 442 zeros and 89 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm. A different RDF was constructed for partially blended food forms of cabbage (processed cabbage) since the maximum %CT estimate was different (31%). The RDF for partially-blended food forms of green and red cabbage contained one detected residue (0.11 ppm), 367 zeros and 164 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The average value of 0.00037 ppm was used for the residue input in chronic dietary exposure assessment for fresh cabbage (cooked and uncooked). This value was the average of one detected residue (0.11 ppm), 473 zeros and 58 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm; the average 11%CT (BEAD, 1999 report for fresh cabbage) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

The average value of 0.0004 ppm was used for the residue input in chronic dietary exposure assessment for processed cabbage (canned and cured). This value was the average of one detected residue (0.11 ppm), 463 zeros and 68 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm; the average 13% CT (according to BEAD 1999 report for processed cabbage) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

#### **Cabbage-Savoy (NB)**

Acute dietary exposure- No PDP or FDA data were available for cabbage-savoy. Therefore, the FDA domestic surveillance data for cabbage were translated to cabbage-savoy (total number of samples = 532; total number of detected residue = 1; detected residue: 0.11 ppm). As was explained for cabbage, the data were not decomposited. The RDF was constructed based on the estimated maximum 17% CT; it contained 1 adjusted residue value (0.33 ppm), 442 zeros, and 89 repeated ½ LOD at 0.0015 ppm.

Chronic dietary exposure-The average value of 0.00037 ppm was used for the residue input in chronic dietary exposure assessment for savoy cabbage. This value was the average of one detected residue (0.11 ppm), 473 zeros and 58 repeated ½ LOD values at 0.0015 ppm; the average 11%CT (according to BEAD 1999 report for fresh cabbage) was used for the calculation of the number of ½ LOD values.

#### **Cauliflower (NB, PB)**

Acute dietary exposure- No PDP data were available for cauliflower. The FDA domestic surveillance data between 1992 and 1998 for cauliflower contained 269 total data with no detected residue found. The RDF was constructed based on 31% CT estimate (BEAD 1999). It contained 69 zeros and 31 repeated ½ LOD values at 0.0015 ppm. This RDF was used for both not-blended and partially-blended food forms of cauliflower.

Chronic dietary exposure- The value of 0.00024 ppm was used for the residue input in dietary exposure assessment. This value was the average of 84 zeros and 16 repeated ½ LOD at 0.0015 ppm; an average 16%CT(according to BEAD 1999 report) was used for the calculation of the number of ½ LOD values.

#### **Collards/Kale/Mustard Greens (PB)**

Acute dietary exposure- No PDP data were available for collards / kale / mustard greens. FDA analyzed 153 samples of collards (4 detected residues: 0.163, 0.330, 0.037, 0.005 ppm), 87 samples of mustard green (2 detected residues: 0.1, 0.83 ppm), and 115 samples of kale (1 detected residue: 0.005 ppm). The data for all the three crops were pooled together (total number of data = 355, number of detected residues = 7) and used for each crop. The RDF was constructed based on the maximum % CT estimate of 28%, 1%, 39% for collards, kale and mustard green respectively. Therefore, for collards, the RDF contained 7 detects, 256 zeros, and 92 repeated ½ LOD values at 0.0015 ; for kale, the RDF contained 7 detects and 693 zeros; and for mustard green the RDF contained 7 detects, 216 zeros, and 131 repeated ½ LOD values at 0.0015 ppm.

Chronic dietary exposure- The calculated average values of 0.00439 ppm for collards (average of 7 detects, 60 repeated ½ LOD, and 288 zeros; based on average % CT of 19%), 0.0021 ppm for mustard green (average of 7 detects, and 693 zeros; based on average % CT of 1%), and 0.00441 ppm for kale (average of 7 detects, 64 repeated ½ LOD, and 284 zeros; based on average % CT of 20%) was used for the residue input in chronic dietary exposure assessment.

#### **Kohlrabi (NB)**

Acute dietary exposure- No PDP or FDA data were available for kohlrabi. The FDA domestic surveillance data for cauliflower was translated to kohlrabi ( total number of samples = 269; total number of detected residue = 0). Since there was no detected residues, the data were not decomposited. Because

there was no % CT information for kohlrabi from BEAD, it was assumed that kohlrabi is 100% treated. Therefore, a residue value of 0.0015 ppm (equal to ½ LOD) was used for kohlrabi.

Chronic dietary exposure- The residue value of 0.0015 ppm was also used for kohlrabi in chronic dietary exposure assessment.

## **LEGUME VEGETABLE GROUP**

### **Green Beans-succulent (PB)**

Acute dietary exposure- The 1994-95 PDP data for fresh green beans were used (total number of samples= 1178; total number of detects= 5, and a weighted average ½ LOD= 0.0033). The RDF for partially blended fresh green beans contained 5 detected residues (0.005, 0.012, 0.011, 0.045, 1.1 ppm), 1143 zeros and 30 repeated ½ LOD values at 0.0033 ppm. An estimated 3% maximum CT for fresh succulent snap beans (according to the 1999 BEAD report) was incorporated into the RDF. For partially-blended canned green beans, the 1996-98 PDP data for canned green beans were used (total number of samples=854; total number of detects=0, and a weighted average ½ LOD= 0.0027). The RDF contained 828 zeros and 26 repeated ½ LOD values. An estimated 8% maximum CT for succulent snap beans grown for processing (according to the 1999 BEAD report) was incorporated into the RDF. For partially-blended frozen green beans, the 1996-98 PDP data for frozen green beans were used (total number of samples=743, total number of detects=11, and a weighted average ½ LOD=0.0026). The RDF contained 11 detected residues (0.003, 0.005(4), 0.006, 0.007, 0.012, 0.017, 0.018, 0.019 ppm), 721 zeros, and 11 repeated ½ LOD values. An estimated 8% maximum CT for succulent snap beans grown for processing (according to the 1999 BEAD report) was incorporated into the RDF.

Chronic dietary exposure- The average value of 0.0012 ppm was used for the residue input in chronic dietary exposure assessment for fresh succulent beans and black-eyed peas. This value was the average of 5 detected residues (sum= 1.173), 1166 zeros and 7 repeated ½ LOD values at 0.0033 ppm (assuming a weighted average 1%CT for fresh market). For canned green beans the average value of 0.0001 ppm was used (820 zeros and 34 repeated ½ LOD at 0.0027 ppm; average 4%CT for processing beans). For frozen green beans the average value of 0.0002 ppm was used (743 total samples with 11 detected residues (sum=0.102 ppm), 19 repeated ½ LOD at 0.0026 ppm and 713 zeros assuming 4%CT ).

Green beans (succulent) data were translated for other succulent beans including succulent black-eyed peas.

### **Green Peas-succulent (PB)**

Acute dietary exposure- The 1992-98 FDA data for fresh sweet peas were used (total number of samples= 540; total number of detects= 13, and ½ LOD= 0.0015). An estimated maximum 8%CT value (according to the 1999 BEAD report) was incorporated into the RDF. The RDF for partially-blended fresh peas contained 13 detected residues (0.005(5), 0.08, 0.01, 0.040, 0.059, 0.026, 0.022, 0.1, 0.81 ppm), 497 zeros and 30 repeated ½ LOD values at 0.0015 ppm. For partially-blended canned sweet peas, the 1994-96 PDP data were used (total number of samples=746; total number of detects=0, and a weighted average ½ LOD= 0.0026). An estimated maximum 5%CT value (according to the 1999 BEAD report) was incorporated into the RDF. The RDF contained 709 zeros and 37 repeated ½ LOD values at 0.0026 ppm. For partially-

blended frozen sweet peas, the 1994-96 PDP data were used (total number of samples=703, total number of detects=10, and a weighted average  $\frac{1}{2}$  LOD=0.0025). An estimated maximum 5%CT value (according to the 1999 BEAD report) was incorporated into the RDF. The RDF contained 10 detected residues (0.005(4), 0.006(2), 0.009(2), 0.029, 0.049 ppm), 668 zeros, and 25 repeated  $\frac{1}{2}$  LOD values.

Chronic dietary exposure- The average value of 0.0022 ppm was used for the residue input in chronic dietary exposure assessment for fresh succulent sweet peas. This value was the average of 13 detected residues (sum=1.172 ppm), 518 zeros and 9 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm; the weighted average 4%CT from BEAD was used to estimate the number of repeated  $\frac{1}{2}$  LOD values. For canned sweet peas the average value of 0.000024 ppm was used. This value was the average of 739 zeros and 7 repeated  $\frac{1}{2}$  LOD at 0.0026 ppm; the weighted average 1%CT from BEAD was used. For frozen sweet peas the average value of 0.000246 ppm was used. This value was the average of 10 detected residues (sum=0.128 ppm), 675 zeros, and 18 repeated  $\frac{1}{2}$  LOD values at 0.0025 ppm; the weighted average 1%CT from BEAD was used.

## **FRUITING VEGETABLE GROUP**

### **Tomato (B, PB, NB)**

Acute dietary exposure- The 1996-98 PDP data for tomatoes were used (total number of samples= 1597; total number of detects=10 [0.003-0.09 ppm, sum of detects = 0.173 ppm], number of samples from imports= 533, and a weighted average  $\frac{1}{2}$  LOD= 0.0026). Because the number of import samples constituted a large portion of the total samples, the estimated maximum %CT value of 38% (based on assumption of 100%CT for import samples and 7% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF for fresh market tomatoes. To accommodate for possible higher level residues in single serving not-blended items, HED has multiplied each detected residue by a factor of 8.3 (tolerance/highest detected residue). The RDF for not blended commodities contained 10 factored residues (0.025-0.75 ppm), 990 zeros and 597 repeated  $\frac{1}{2}$  LOD values at 0.0026 ppm. The RDF for partially blended commodities contained 10 detected residues (0.003-0.09 ppm), 990 zeros and 597 repeated  $\frac{1}{2}$  LOD values at 0.0026 ppm. The RDF for catsup, paste, and puree, which are also considered to be partially blended commodities was constructed based on 21% CT (maximum CT for domestic processing tomatoes); it contained 10 detected residues (0.003-0.09 ppm), 1262 zeros and 325 repeated  $\frac{1}{2}$  LOD values at 0.0026 ppm.

The RDF for dried tomatoes, which is a blended commodity, contains 10 detected residues, and 1587 repeated  $\frac{1}{2}$  LOD values at 0.0026 ppm.

Chronic dietary exposure- The average value of 0.00103 ppm was used for the residue input for tomato commodities derived from fresh tomatoes (whole tomatoes and dried tomatoes). This value was the average of 10 detected residues (sum = 0.173 ppm), 1022 zeros and 565 repeated  $\frac{1}{2}$  LOD values. A weighted average 36%CT (based on 100%CT for imports and 4%CT for domestic fresh market samples) was used in estimating the number of  $\frac{1}{2}$  LOD values.

The average value of 0.000327 ppm was used for the residue input for commodities derived from processing tomatoes (tomato juice, catsup, paste, and puree). This value was the average of 10 detected

residues, 1453 zeros, and 134 repeated  $\frac{1}{2}$  LOD. A weighted average 9% CT (according to the 1999 BEAD report) was used in estimating the number of  $\frac{1}{2}$  LOD values.

### **Green Peppers (NB, PB)**

Acute dietary exposure- No PDP data were available for peppers. The 1992-1998 FDA domestic surveillance data for green peppers contain 397 samples with 8 detects (0.005, 0.02, 0.02, 0.04, 0.04, 0.10, 0.21, 0.251 ppm). There are too few detects to decomposite the monitoring data so the data were used directly. To accommodate for possible higher level residues in single serving not-blended items, the reported residues were multiplied by a factor of 2 (tolerance/highest detected residue). The estimated 19% maximum CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF for not-blended commodities of peppers contains 8 factored detects (0.01, 0.04, 0.04, 0.08, 0.08, 0.20, 0.42, 0.5 ppm), 322 zeros and 67 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm. The RDF for partially blended commodities of peppers contains the 8 detects as reported by FDA (0.005, 0.02, 0.02, 0.04, 0.04, 0.10, 0.21, 0.251 ppm), 322 zeroes, and 67 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

### Chronic dietary exposure

The estimated weighted average 8% CT value according to the 1999 BEAD report was incorporated into estimating chronic dietary exposure. The average of the 8 detects, 365 zeroes, and 24 samples at  $\frac{1}{2}$  LOD=0.0017 ppm.

### **Peppers-other and Pimiento pepper**

Green pepper data were used as surrogate data.

### **Peppers-chili incl jalapeno (NB, PB)**

#### Acute dietary exposure

The 1992-1998 FDA domestic surveillance data for hot peppers contain 83 samples with 1 detect reported in 1993 at 0.03 ppm. The 1999 BEAD report indicates that the weighted average %CT is 0 and the estimated maximum is only 1%. The use pattern for hot peppers is identical to that for green peppers; therefore, green pepper data will be used as surrogate data for hot peppers, adding zeroes in the RDF to account for the lower %CT for hot peppers. The RDF for not-blended commodities of hot peppers contained 8 factored detects (0.01, 0.04, 0.04, 0.08, 0.08, 0.20, 0.42, 0.5 ppm) and 792 zeros. The RDF for partially blended commodities of peppers contained the 8 detects as reported by FDA (0.005, 0.02, 0.02, 0.04, 0.04, 0.10, 0.21, 0.251 ppm), and 792 zeroes.

#### Chronic dietary exposure

Assuming 1%CT, the chronic anticipated residues are the average of the 8 detects as reported by FDA (0.005, 0.02, 0.02, 0.04, 0.04, 0.10, 0.21, 0.251 ppm), and 792 zeroes=  $0.686/800=0.00086$  ppm.

## **CUCURBIT VEGETABLES GROUP**

### **Cucumber(NB, PB)**

Acute dietary exposure- The 1992-98 FDA data for cucumbers were used (total number of samples= 451; total number of detects=1[0.088 ppm], and  $\frac{1}{2}$  LOD= 0.0015). The estimated 7%CT (fresh market cucumbers) and 12%CT (processing cucumbers) value according to the 1999 BEAD report was

incorporated into the appropriate RDF. To accommodate for possible higher level residues in single serving not-blended items, HED has multiplied the detected residue by a factor of 8.5 (tolerance/detected residue). The RDF for not-blended commodities (fresh market; uncooked) contained 1 factored detect (0.75 ppm), 419 zeros, and 31 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm. For partially-blended commodities (processed), the RDF contained 1 detected residue (0.088 ppm), 397 zeros and 53 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

**Chronic dietary exposure-** The average value of 0.00025 ppm (uncooked) and 0.00027 ppm (canned) were used for the residue input in chronic dietary exposure assessment for cucumbers. For uncooked cucumbers, this value was the average of 1 detected residue, 433 zeros and 17 repeated  $\frac{1}{2}$  LOD values (assuming a weighted average 4%CT). For canned cucumbers, this value was the average of 1 detected residue, 428 zeros and 22 repeated  $\frac{1}{2}$  LOD values. A weighted average 5%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

#### **Squash, summer (NB, PB)**

**Acute dietary exposure-** The 1992-98 FDA data for summer squash were used (total number of samples= 514; total number of detects=1[0.11 ppm], and  $\frac{1}{2}$  LOD= 0.0015). The estimated 9%CT value according to the 1999 BEAD report was incorporated into the RDF. To accommodate for possible higher level residues in single serving not-blended items, HED has multiplied the detected residue by a factor of 4.5 (tolerance/detected residue). The RDF for not-blended contained 1 factored detect (0.5 ppm), 468 zeros and 45 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm. The RDF for partially-blended contained 1 detected residue (0.11 ppm), 468 zeros and 45 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

**Chronic dietary exposure-** The average value of 0.00027 ppm was used for the residue input in chronic dietary exposure assessment for summer squash. This value was the average of 1 detected residue, 493 zeros and 20 repeated  $\frac{1}{2}$  LOD values. A weighted average 4%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

#### **Squash, winter (NB)**

**Acute dietary exposure-** The 1997-98 PDP data for winter squash were used (total number of samples= 969; total number of detects=2, number of samples from imports=349, and a weighted average  $\frac{1}{2}$  LOD= 0.0025). Because the number of import samples constituted a large portion of the total samples, the weighted average %CT of 42% (based on the assumption of 100%CT for imported samples and 9% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The RDF for not-blended contained 2 detected residues (0.003, 0.007 ppm), 562 zeros and 405 repeated  $\frac{1}{2}$  LOD values at 0.0025 ppm.

**Chronic dietary exposure-** The average value of 0.0006 ppm was used for the residue input in chronic dietary exposure assessment for winter squash. This value was the average of 2 detects, 595 zeros and 372 repeated  $\frac{1}{2}$  LOD values. (assuming a weighted average 39%CT based on 100%CT for imports and 4%CT for domestic samples).

#### **Cantaloupe(PB, NB)**

Acute dietary exposure- The 1992-98 FDA data for cantaloupes were used (total number of samples= 414; total number of detects=3, and  $\frac{1}{2}$  LOD= 0.0015). The estimated 18%CT value according to the 1999 BEAD report was incorporated into the RDF. The RDF for not-blended/partially-blended contained 3 detected residues (0.02, 0.02, 0.03 ppm), 339 zeros and 72 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm. Cantaloupe data and 18%CT were translated for **Persian melon, casabas, crenshaws, balsam pear, bittermelon, and wintermelon.**

For **honeydew**, the estimated 10%CT value was incorporated into the RDF (include 3 detected residues, 373 zeros, and 38 repeated  $\frac{1}{2}$  LOD values).

Chronic dietary exposure- The average value of 0.00034 ppm was used for the residue input in chronic dietary exposure assessment for **cantaloupes, Persian melon, casabas, crenshaws, balsam pear, bittermelon, and wintermelon.** The average of 3 detected residues, 364 zeros and 47 repeated  $\frac{1}{2}$  LOD value was used. A weighted average 12%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

The average value of 0.00023 ppm was used for **honeydew**. The average of 3 detected residues, 393 zeros, and 18 repeated  $\frac{1}{2}$  LOD values was used. A weighted average 5%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

#### **Watermelon (NB, PB)**

Acute dietary exposure- The 1992-98 FDA data for watermelon were used (total number of samples= 415; total number of detects=1, and  $\frac{1}{2}$  LOD= 0.0015). An estimated 5%CT value, according to the 1999 BEAD report, was incorporated into the RDF. The RDF for not-blended/partially-blended commodities contained 1 detected residues (0.002 ppm<sup>1</sup>), 394 zeros and 20 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The average value of 0.00003 ppm was used for the residue input in chronic dietary exposure assessment for watermelon. This value was the average of 1 detected residues, 407 zeros and 7 repeated  $\frac{1}{2}$  LOD values. A weighted average 2%CT was used to estimate the number of  $\frac{1}{2}$  LOD values.

### **CITRUS FRUITS GROUP**

#### **Oranges (NB, PB)**

Acute dietary exposure- For oranges-fresh(peeled), the 1994-1996 PDP data for oranges (peeled) were used (total number of samples = 1892; number of samples from imports = 23; total number of detects = 0; weighted average  $\frac{1}{2}$  LOD = 0.003091 ppm). Because the number of import samples did not constitute a large portion of the total samples, the maximum %CT value of 3% for domestic crop ( according to BEAD 1999 report) was incorporated into the RDF. Since no detected residues were found in oranges-peeled, no decompositing of the composited data were conducted. The RDF contained 97 zeros and 3 repeated  $\frac{1}{2}$  LOD values at 0.003091 ppm. This RDF was also used for partially-blended food forms of oranges.

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<sup>1</sup> The 1 detected residue for watermelon(0.002) reported by FDA during 1992-98 is below the LOQ (0.01 ppm).

Chronic dietary exposure- The calculated value of 0.000031 ppm was used for the residue input in chronic dietary exposure assessment for oranges. This value was the average of one ½ LOD value at 0.003091 ppm and 99 zeros; the average % CT of 1% was used to calculate the number of ½ LOD values.

### **Oranges-Juice (PB)**

Acute dietary exposure- For oranges-Juice, the 1997-1998 PDP data for orange juice were used (total number of samples = 1392; number of samples from imports = 532; total number of detects = 0; weighted average ½ LOD = 0.00368 ppm). Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 40% (based on assumption of 100% crop treated for import samples and 3% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The RDF contained 60 zeros and 40 repeated ½ LOD values at 0.00368 ppm.

Chronic dietary exposure- The calculated value of 0.00144 ppm was used for the residue input in chronic dietary exposure assessment for orange juice. This value was the average of 39 repeated ½ LOD values at 0.00368 ppm and 61 zeros; the weighted average %CT value of 39% (based on the assumption of 100% crop treated for import samples and 1% average %CT estimate for domestic samples, according to BEAD 1999 report) was used.

### **Oranges, Peel (PB)**

Data on citrus peels is not available. PDP data are based on peeled oranges; therefore, they are not of use in estimating residues on the peel. FDA data are available on unpeeled oranges. During the period of 1992-1998 FDA analyzed 966 unpeeled orange sample with 6 detects (0.038, 0.03, 0.05, 0.015, 0.07, and 0.06 ppm). Processing data are not available for citrus peels (use on citrus is not being supported for reregistration); therefore, FDA data are of limited usefulness also. In this assessment we are making a conservative estimate of dietary exposure from citrus peels based on the assumption that residues will not exceed tolerance levels for citrus peels (0.7 ppm).

Acute dietary exposure- The RDF for orange peels contains 100 values, 3 of which are equal to the tolerance (0.7 ppm), and 97 of which are set at zero. A maximum 3%CT value for oranges ( according to BEAD 1999 report) was incorporated into the RDF.

Chronic dietary exposure- An average value of 0.007 ppm was used for chronic exposure based on the average of 100 values, 1 of which is equal to tolerance (0.7 ppm) and 99 zeroes (based on average 1%CT from BEAD report).

### **Lemons/Limes/Tangerines/Tangelos/Kumquats/Citrus Citron (NB, PB)**

Acute dietary exposure- For lemons/limes/tangerines/tangelos/kumquats/citrus citron-fresh(peeled), the 1994-1996 PDP data for oranges (peeled) were used (total number of samples = 1892; number of samples from imports = 23; total number of detects = 0; weighted average ½ LOD = 0.003091 ppm). Because the number of import samples did not constitute a large portion of the total samples, the maximum %CT value of 1% for domestic crop ( according to BEAD 1999 report) was incorporated into the RDF. Since no detected residues were found in oranges-peeled, no decompositing of the composited data were conducted. The RDF contained 99 zeros and one ½ LOD value at 0.003091 ppm. This RDF was also used for

partially-blended food forms of all the citrus fruits mentioned above. The DEEM default PFs were used for all the processed food forms.

Chronic dietary exposure- The calculated value of 0.000031 ppm was used for the residue input in chronic dietary exposure assessment of lemons/limes/tangerines/tangelos/kumquats/citrus citron. This value was the average of one ½ LOD value at 0.003091 ppm and 99 zeros; the maximum 1% CT estimate was used to calculate the number of ½ LOD values (note that BEAD estimate for average % CT is 0%, however since the maximum % CT of 1% was used for acute according to BEAD 1999 report, this value was also used in chronic dietary exposure conservatively).

#### **Lemon-Juice/Lime-Juice/Tangerine-Juice (PB)**

Acute dietary exposure- For lemon-juice/lime-juice/tangerine-juice, the 1997-1998 PDP data for orange juice were used (total number of samples = 1392; number of samples from imports = 532; total number of detects = 0; weighted average ½ LOD = 0.00368 ppm). Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 39% (based on assumption of 100% crop treated for import samples and 1% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The RDF contained 61 zeros and 39 repeated ½ LOD values at 0.003684 ppm.

Chronic dietary exposure- The calculated average residue value of 0.00144 ppm was used for the residue input in chronic dietary exposure assessment for lemon/lime/tangerine-juice, based on the orange juice assessment.

#### **Lemon/Lime, Peel (PB)**

Acute dietary exposure- The RDF for lemon peels contains 100 values, 1 of which are equal to the tolerance (0.7 ppm), and 99 of which are set at zero. A maximum 1%CT value for oranges ( according to BEAD 1999 report) was incorporated into the RDF.

Chronic dietary exposure- An average value of 0.007 ppm was used for chronic exposure based on the average of 100 values, 1 of which is equal to tolerance (0.7 ppm) and 99 zeroes (based on average 1%CT from BEAD report).

#### **Grapefruit (NB)**

Acute dietary exposure- For grapefruit-fresh(peeled), the 1994-1996 PDP data for oranges (peeled) were used (total number of samples = 1892; number of samples from imports = 23; total number of detects = 0; weighted average ½ LOD = 0.003091 ppm). Because the number of import samples did not constitute a large portion of the total samples, the maximum %CT value of 4% for domestic crop ( according to BEAD 1999 report) was incorporated into the RDF. Since no detected residues were found in oranges-peeled, no decompositing of the composited data were conducted. The RDF contained 96 zeros and 4 repeated ½ LOD values at 0.003091 ppm. This RDF was also used for partially-blended food forms of grapefruits.

Chronic dietary exposure- The calculated average residue value of 0.000062 ppm was used for the residue input in chronic dietary exposure assessment for grapefruits. This value was the average of 2 repeated ½

LOD values at 0.003091 ppm and 98 zeros; the average % CT of 2% was used to calculate the number of ½ LOD values.

### **Grapefruit-Juice (PB)**

Acute dietary exposure- For grapefruit-Juice, the 1997-1998 PDP data for orange juice were used (total number of samples = 1392; number of samples from imports = 532; total number of detects = 0; weighted average ½ LOD = 0.00368 ppm). Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 40% (based on assumption of 100% crop treated for import samples and 4% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The RDF contained 60 zeros and 40 repeated ½ LOD values at 0.003684 ppm.

Chronic dietary exposure- The calculated average residue value of 0.001437 ppm was used for the residue input in chronic dietary exposure assessment for grapefruit juice. This value was the average of 39 repeated ½ LOD values at 0.00368 ppm and 61 zeros; the weighted average %CT value of 39% (based on the assumption of 100% crop treated for import samples and 2% average %CT estimate for domestic samples, according to BEAD 1999 report) was used.

### **Grapefruit-peel**

Acute dietary exposure- The RDF for grapefruit peels contains 100 values, 4 of which are equal to the tolerance (0.7 ppm), and 96 of which are set at zero. A maximum 4%CT value for oranges ( according to BEAD 1999 report) was incorporated into the RDF.

Chronic dietary exposure- An average value of 0.0014 ppm was used for chronic exposure based on the average of 100 values, 2 of which is equal to tolerance (0.7 ppm) and 98 zeroes (based on average 2%CT from BEAD report).

## **POME FRUITS GROUP**

### **Apples (NB, PB, B)**

Acute dietary exposure - In 1999, PDP started sampling single apples (126 of them) or single portions of apples (256 of them) that constituted the 158 total composite samples that were analyzed. These data were not used in this assessment because results were not available for a complete year. Potential residues on samples gathered from fresh apples may be expected to differ from those on apples that have been in controlled storage for several months. Consequently, they were not used for not-blended food forms of apples. The 1993-1996 PDP data for apples (total number of samples = 2554; number of samples from imports = 118; total number of detects = 32; number of detects from imports = 9 ; range of detected residues = 0.003 - 0.33 ppm, weighted average ½ LOD = 0.002614 ppm) were use for both not-blended and partially-blended food forms of apples. For not-blended food forms, the detected residue data were decomposited to, initially, 1000 residue values, which after truncation at tolerance (0.5 ppm) totaled 992 (range of generated values = 0.0000- 0.4974 ppm with n = 15). Because the number of detects from import samples constituted a large portion of the total detects, the %CT was weighed for import samples. The weighted average %CT value of 10% (based on assumption of 100% crop treated for import samples and 6% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated

into the RDF. The RDF for not-blended food forms contained 992 detects, 71257 zeros, and 6925 repeated  $\frac{1}{2}$  LOD values at 0.002614 ppm. For partially-blended food forms of apples, the 1993-1996 PDP data were also used. The RDF contained 32 detects, 2299 zeros, and 223 repeated  $\frac{1}{2}$  LOD values at ppm.

For a blended food form of apples, the RDF contained 32 detects and 2522 repeated  $\frac{1}{2}$  LOD values at 0.002614 ppm.

Chronic dietary exposure- The calculated value of 0.000542 ppm was used for the residue input in chronic dietary risk assessment. This value was the average of 32 detected residues (sum = 0.934), 2350 zeros, and 172 repeated  $\frac{1}{2}$  LOD values at 0.002614 ppm; the weighted average 8%CT (based on assumption of 100% crop treated for import samples and 4% average %CT estimate for domestic samples, according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

### **Apples Juice (PB)**

Acute dietary exposure - No detected residues were reported in 1996-1998 PDP data for apple juice (total number of samples = 1554; total number of imports = 448, total number of detects = 0, weighted average  $\frac{1}{2}$  LOD = 0.002549 ppm). Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 33% (based on the assumption of 100% crop treated for import samples and 6% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The RDF contained 67 zeros and 33 repeated  $\frac{1}{2}$  LOD values at 0.002549 ppm).

Chronic dietary exposure- The calculated value of 0.000816 ppm was used for the residue input in chronic dietary risk assessment. This value was the average of 68 zeros and 32 repeated  $\frac{1}{2}$  LOD values at 0.002549 ppm; the weighted average %CT, 32% (based on assumption of 100% crop treated for import samples and 4% average %CT estimate for domestic samples, according to BEAD 1999 report) according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

### **Pear (NB, PB, B)**

Acute dietary exposure - For not-blended food forms of pears, the PDP single serving data for pears from July of 1998 to June of 1999 (total number of samples = 645; number of samples from imports = 43; total number of detects = 6 ; range of detected residues = 0.003 - 0.084 ppm, weighted average  $\frac{1}{2}$  LOD = 0.0035 ppm) were used. Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 24% (based on assumption of 100% crop treated for import samples and 19% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The RDF contained 6 detects, 490 zeros, and 149 repeated  $\frac{1}{2}$  LOD values at 0.0035 ppm.

For partially-blended food forms of pear, the 1996-1998 PDP (composite) data for pears (total number of samples = 1420; number of samples from imports = 217; total number of detects = 37; number of detects from imports = 24 ; range of detected residues = 0.003 - 0.094 ppm, weighted average  $\frac{1}{2}$  LOD = 0.0030 ppm) were use. Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 31% (based on assumption of 100% crop treated for import samples and 19% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated

into the RDF. The RDF for partially-blended food forms contained 37 detects, 980 zeros, and 403 repeated  $\frac{1}{2}$  LOD values at 0.0030 ppm.

For a blended food form of pear, the 1996-1998 PDP (composite) data for pears were used. The RDF for blended food form contained 37 detects and 1383 repeated  $\frac{1}{2}$  LOD values at 0.0030 ppm.

Chronic dietary exposure- The 1996-1998 PDP (composite) data for pears was used for chronic dietary risk assessment. The calculated value of 0.001068 ppm was used. This value was the average of 37 detected residues, 1079 zeros, and 304 repeated  $\frac{1}{2}$  LOD values at 0.0030 ppm; the weighted average %CT of 24% (based on assumption of 100% crop treated for import samples and 4% average %CT for domestic samples according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

### **Pear Juice (PB)**

No PDP data are available for pear juice. The FDA domestic surveillance data for 1992-1998 contain 22 analyses with no detectable residues reported. However, since the total number of samples in FDA data were below what is generally considered by the Agency to be statistically adequate (100 samples), those data could not be used. PDP data on pears will be used for pear juice as a conservative assumption of residue.

Acute dietary exposure- Use data for partially blended food forms of pear. The RDF contains 37 detects, 980 zeros, and 403 repeated  $\frac{1}{2}$  LOD values at 0.0030 ppm.

Chronic dietary exposure- Use the chronic anticipated residue estimated for pear fruit (0.001068 ppm), which was derived from PDP monitoring data.

## **STONE FRUITS GROUP**

### **Apricot (NB, PB, B)**

Acute dietary exposure- No PDP data were available for apricot. FDA analyzed 153 samples with one detected residue (0.11 ppm) between 1992 to 1998. Since apricot is considered a not-blended commodity, 30 detected residues were needed for decompositing. Therefore, since the use pattern of apricot was similar to peach and there was adequate number of PDP data which were preferable to FDA data, the peach PDP data were translated to apricot.

For apricots-fresh, the 1994-1996 PDP data for peaches-fresh were used (total number of samples = 1087; number of samples from imports = 366; total number of detects = 65; number of detects from imports = 57; range of detected residues = 0.003 - 0.16 ppm, weighted average  $\frac{1}{2}$  LOD = 0.003269). Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 79% (based on the assumption of 100% crop treated and 68% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The detected residue data were decomposited to, initially, 1000 residue values which after truncation at tolerance (0.75 ppm) totaled 998 residue values (range of generated values = 0.0 - 0.339 ppm with n = 21). The RDF contained 998 generated detects, 2085 zeros, and 6846 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm.

For partially-blended food forms of apricot, the 1997 PDP data for canned-peaches were used (total number of samples = 754; number of samples from imports = 11; total number of detects = 0; number of detects from imports = 0; weighted average  $\frac{1}{2}$  LOD = 0.00347 ppm). The % CT estimate of 68% were used according to BEAD 1999 report (since the number of import samples were very low, the %CT were not weighted for 100% CT imports). The RDF contained 32 zeros, and 68 repeated  $\frac{1}{2}$  LOD values at 0.00347 ppm.

For apricot-dried, which is considered a blended commodity, a separate RDF was made which contained 65 detects and 1022 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm.

For apricot juice, used apricot PB RDF.

**Chronic dietary exposure-** For the food forms of apricots that are derived from fresh fruit (uncooked, cooked, dried, and juice), the calculated value of 0.003371 ppm was used in chronic dietary exposure assessment. This value, which was translated from PDP fresh peach data, was the average of 65 detects (sum=0.984 ppm), 215 zeros and 392 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm; the weighted average %CT of 68% (based on 100% CT for imports and 52% CT for domestic samples) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

For canned apricots, the calculated value of 0.00181 ppm was used in chronic dietary exposure assessment. This value, which was based on PDP canned/frozen peach data, was the average of 11 zeros and 12 repeated  $\frac{1}{2}$  LOD values at 0.00347 ppm; the average %CT of 52% (from BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

#### **Cherries / Cherry-Juice (PB)**

**Acute dietary exposure-** No PDP data were available for cherries. The FDA domestic surveillance data for cherries contained 445 total data between 1992 and 1998 with 29 detected residue found (range = 0.0015<sup>2</sup> - 0.06 ppm). The RDF was constructed based on 29% CT estimate (BEAD 1999). It contained 29 detects, 316 zeros and 100 repeated  $\frac{1}{2}$  LOD values at 0.0005 ppm. This RDF was used for partially-blended food forms of cherries.

**Chronic dietary exposure-** The average value of 0.00105 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 29 detects (sum=0.449), 378 zeros and 38 repeated  $\frac{1}{2}$  LOD values at 0.0005 ppm; an average 17%CT (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

#### **Nectarines (NB)**

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<sup>2</sup> Cherries: This value was the estimated value of "T" (trace). "Trace" residues in FDA data are assumed (in this review) to be equal to  $\frac{1}{2}$  LOQ and LOQ is assumed to be 0.01 ppm in general in FDA data. However, since there is a detected residue of 0.003 ppm, which is lower than 0.01 ppm, reported in FDA data for cherries, that value (0.003 ppm) is assumed to be the LOQ; therefore, the "trace" residue is 0.0015 ppm ( $0.003 \times \frac{1}{2} = 0.0015$ ).

Acute dietary exposure- No PDP or FDA data were available for nectarines. For nectarines-fresh, the 1994-1996 PDP data for peaches-fresh were used (total number of samples = 1087; number of samples from imports = 366; total number of detects = 65; number of detects from imports = 57 ; range of detected residues = 0.003 - 0.16 ppm, weighted average  $\frac{1}{2}$  LOD = 0.003269). Maximum %CT of 100% (according to BEAD 1999 report) was used in constructing the RDF for nectarines. The detected residue data were decomposited to, initially, 1000 residue values which after truncation at tolerance (0.5 ppm) totaled 997 residue values (range of generated values = 0.00001 - 0.3756 ppm with n = 21). The RDF contained 997 generated detects and 6847 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm. (Note: Since as a result of truncation of generated residue values at 0.5 ppm, the number of generated residue values reduced by 1 from peach data, 1 values of  $\frac{1}{2}$  LOD was added to the number of  $\frac{1}{2}$  LOD values so that the total number of expected treated samples; i.e. detects +  $\frac{1}{2}$  LOD, be equal to that of peaches.)

Chronic dietary exposure- For nectarines-fresh, the 1994-1996 PDP data for peaches-fresh were used. The calculated average residue value of 0.00300 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 65 detects (sum of which was 0.984 ppm), 392 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm and 195 zeros; the weighted average % CT value of 70% (based on 100% CT for imports and 54% CT for domestic samples) was used for the calculation of the average residue.

#### **Peaches (NB, PB, B)**

Acute dietary exposure- For peaches-fresh, the 1994-1996 PDP data were used (total number of samples = 1087; number of samples from imports = 366; total number of detects = 65; number of detects from imports = 57 ; range of detected residues = 0.003 - 0.16 ppm, weighted average  $\frac{1}{2}$  LOD = 0.003269). Because the number of import samples constituted a large portion of the total samples, the weighted average %CT value of 47% (based on assumption of 100% crop treated for import samples and 20% maximum %CT estimate for domestic samples, according to BEAD 1999 report) was incorporated into the RDF. The detected residue data were decomposited to, initially, 1000 residue values which after truncation at tolerance (0.7 ppm) totaled 998 (range of generated values = 0.00001- 0.52553 ppm with n = 21). The RDF for not-blended food forms contained 998 (generated) detects, 8846 zeros, and 6846 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm.

For partially-blended food forms of peaches, the 1997 PDP data for canned-peaches were used (total number of samples = 754; number of samples from imports = 11; total number of detects = 0; number of detects from imports = 0 ; weighted average  $\frac{1}{2}$  LOD = 0.00347). The %CT estimate of 20% were used according to BEAD 1999 report (since the number of import samples were very low, the %CT were not weighted for 100% CT imports). The RDF contained 80 zeros and 20 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm. For peaches-dried which is considered a blended commodity, the 1994-1996 PDP data for fresh peaches were used. The RDF for peaches-dried contained 65 detects and 1022 repeated  $\frac{1}{2}$  LOD values at 0.003269 ppm.

Chronic dietary exposure- For **peaches-uncooked, cooked, dried, and juice**, the calculated value of 0.0021 ppm was used in chronic dietary exposure assessment. This value was based on fresh peach monitoring data (1087 samples) and was the average of 65 detects (sum=0.984 ppm), 630 zeros and 392

repeated ½ LOD values at 0.003269 ppm; the weighted average %CT of 42% (based on 100% CT for imports and 12% CT for domestic samples) was used for the calculation of the number of ½ LOD values.

For **canned-frozen** food forms of peaches, the calculated value of 0.000416 ppm was used in chronic dietary exposure assessment. This value was the average of 78 zeros and 12 repeated ½ LOD values at 0.00347 ppm; the average %CT of 12% (from BEAD 1999 report) was used for the calculation of the number of ½ LOD values.

#### **Plums (NB, PB)**

Acute dietary exposure- No PDP data were available for plums. However, FDA analyzed 112 samples of plums between 1992 and 1998 (domestic surveillance data); no residues were detected (weighted average ½ LOD = 0.0015 ppm). Using a maximum 54% CT estimate (based on 1999 BEAD report), the RDF contained 54 repeated ½ LOD values at 0.0015 ppm and 46 zeros. This RDF was used for both not-blended and partially-blended food forms of plums.

Chronic dietary exposure- The calculated average residue value of 0.000585 ppm was used for the residue input in chronic dietary exposure assessment of plums. This value was the average of 39 repeated ½ LOD values at 0.0015 ppm and 61 zeros; an average 39 % CT value was used for the calculation of the average residue.

### **SMALL FRUITS AND BERRIES GROUP**

#### **Blackberries/Blackberry-Juice (PB)**

Acute dietary exposure- No PDP data were available for blackberries. FDA domestic surveillance data only has 43 samples of blackberries analyzed; this number is below what is considered by the Agency to be statistically adequate (100 samples) and thus could not be used. Therefore, the FDA (domestic surveillance) for caneberries samples (blackberries and black/red raspberries) were pooled together (total number of samples = 192 and 3 detected residues: 0.0005<sup>3</sup>, 0.033, 0.001). The RDF was based on 23% CT and contained 3 detects, 41 repeated ½ LOD at 0.00015 ppm, and 148 zeros. This file was also used for blackberry juice which is considered a partially-blended commodity; the DEEM default PF was used for blackberry juice.

Chronic dietary exposure- The value of 0.000205 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 3 detects, 32 repeated ½ LOD at 0.00015 ppm, and 157 zeros; the average %CT, 18% (according to BEAD 1999 report) was used for the calculation of the number of ½ LOD values.

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<sup>3</sup> FDA lists this residue as "T" (trace). In this document, trace residues are assumed to be at the level of LOQ/2. It is also assumed that LOQ = 0.01 ppm in FDA data unless lower residue (than 0.01) is reported in FDA for a particular commodity in which case LOQ = the lower residue, and trace residue = lower residue /2. Since the lowest residue found for blackberries (0.001 ppm) is lower than 0.01 ppm, therefore, trace = 0.001 / 2 = 0.0005 ppm for this commodity. In addition, the assumed LOD = LOQ/3 relationship yields : LOD = 0.001 / 3 = 0.0003 ppm and therefore ½ LOD = 0.00015 ppm.

### **Raspberries (PB)**

Acute dietary exposure- No PDP data were available for raspberries. The 1992-1998 FDA domestic surveillance data contained 2 detected residues from the total of 139 samples analyzed. Using the maximum % CT estimate, 45% (from 1999 BEAD report), and the FDA data, the RDF was constructed; it contained 2 detected residues (0.033, 0.005 ppm), 77 zeros and 60 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The value of 0.000630 ppm was used for chronic dietary exposure assessment. This value was the average of 2 detects, 104 zeros, and 33 repeated  $\frac{1}{2}$  LOD at 0.0015 ppm; the average %CT, 25% (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.

### **Dewberries/Loganberries/Youngberries/Boysenberries (PB)**

Acute dietary exposure- No PDP data were available for dewberries/loganberries/youngberries/boysenberries. FDA (domestic surveillance) analyzed 192 samples of blackberries and raspberries between 1992 and 1998 (with 3 detected residues: 0.0005<sup>4</sup>, 0.033, 0.001). Since FDA data for dewberries/loganberries/youngberries were neither available nor sufficient (in number), the FDA data for caneberries (blackberries and raspberries) were used instead. In addition, since there was no estimate of % CT from BEAD for dewberries/ loganberries/ youngberries/ boysenberries 45% CT, the same as that of raspberry, was assumed. Consequently, the RDF contained 3 detected residues, 106 zeros, and 83 repeated  $\frac{1}{2}$  LOD values at 0.00015 ppm.

Chronic dietary exposure- The value of 0.00024 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 3 detects, 106 zeros, and 83 repeated  $\frac{1}{2}$  LOD values at 0.00015 ppm; 45% CT was assumed in calculating the number of  $\frac{1}{2}$  LOD values.

### **Blueberries (PB)**

Acute dietary exposure- No PDP data were available for blueberries. FDA analyzed 247 domestic samples between 1992 to 1998 in their survey studies with no detected residues found. The RDF was constructed based on 11% CT estimate (BEAD 1999). It contained 89 zeros and 11 repeated  $\frac{1}{2}$  LOD values at 0.0015 ppm.

Chronic dietary exposure- The average value of 0.00009 ppm was used for the residue input in chronic dietary exposure assessment. This value was the average of 94 zeros and 6 repeated  $\frac{1}{2}$  LOD at 0.0015 ppm; the average %CT, 6% (according to BEAD 1999 report) was used for the calculation of the number of  $\frac{1}{2}$  LOD values.